

UNIVERSAL CONVERSION SERVER

Background Of The Invention

5 The present invention relates to computer systems. More specifically, the invention relates to methods and systems for allowing a computer to work with input data that is in a format nominally incompatible with the computer.

10 Many forms of computer operating systems, hardware applications exist today, such as Macintosh, IBM, Intel, Dell, etc. A common problem among computer users today, is the difficulties and inconveniences caused by using, or trying to use, data from one operating system on a different operating system. For example, if a person receives through e-mail an application that was in a Macintosh format, that person may not be able to run the application if they have a Dell computer.

20 A commonly used solution for this problem is a filter that is located in the application and that allows certain files to be formatted to another type of application. This solution is inconvenient, however, because it is very difficult to find all the types of filters that would be needed so that every type of file could be used. For example, Microsoft Word file formatted to WordPro file or format file from one version of application to another. Simulation of one operating system in another operating system. For example, DOS is simulated in the Unix operating system.

Another solution is to use a "Universal Driver Server" patent application no. 09/564,619 filed May 4, 2000, that can transform almost any file through a server. For example, if a person receives a game that is compatible only for Macintosh, and the person owns an Intel computer, then that person may go on the Internet to look for the same game in a format that is compatible to their own operating system. This solution works in some cases, but very often, similar software is not found.

Summary Of The Invention

An object of this invention is to provide a procedure that allows a person to use data, from one computer operating system, in a computer having a different operating system.

Another object of the present invention is to provide a universal server online that is able to transform fully any type of file.

Another object of the present invention is to convert file from one application format or version to another.

These and other objectives are attained with a method and system for re-formatting computer files. The method comprises the steps of inputting a data file into a computer, and determining if the data file is compatible with the computer. If the data file or application program is not compatible with the computer or application, the data file or program is transmitted over the Internet to a universal server; and the universal

server transforms the data file or program into a format compatible with the computer, and sends the transformed data file back to the computer.

5 Preferably, the universal server identifies the type of file or application program, and transforms the file into a different format of the same type. Also, in a preferred embodiment, a user of the computer identifies user requirements, these requirements are transmitted to
10 the universal server, and the file is reformatted in accordance with the user requirements.

With the present invention, for example, a person, who owns a Dell computer, may receive a program from a
15 Macintosh user. The person can then go on the Internet, and the sever automatically takes the program and transforms it into a compatible form. The program is then sent back to the person in a usable form. This process can be done with any type of file.

20 We are offering a business model program developers will have agreement with universal conversion server to keep links to their source code. When customer/user pays for license, for example the limited access to the source
25 code will be given to compile it on appropriate operating system.

30 Further benefits and advantages of the invention will become apparent from a consideration of the following detailed description, given with reference to the accompanying drawings, which specify and show preferred embodiments of the invention.

Brief Description Of The Drawings

5 Figure 1 is a general block diagram illustrating a universal conversion server embodying this invention.

Figure 2 is an example of a database that is used by the universal server of Figure 1.

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Figure 3 generally illustrates a procedure for reformatting a program.

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Figure 4 is a flow chart of a preferred universal conversion system.

Detailed Description Of The Preferred Embodiments

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Figure 1 shows the general block scheme of a universal conversion server. In this service, a network 100 is connected to a computer 101, which may be a personal computer. The computer is connected to a microphone 102 and to a keyboard 103. The computer also has the appropriate driver 110. Voice commands or input are given through the microphone, typed commands are given through the keyboard, and the driver is used to transmit data to disks and compact disks.

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Sub ~~X7~~ If, for example, a person may receive data from the Internet in the form of voice data, the person may want to compress the data into another format because the person may not have a compatible driver. In this case,

the person sends the data to a Universal conversion server 104 and states what operation needs to be performed and what operating system they may own. This universal conversion server (UCS) determines what should be done from the user description or from type of file and information about user computer.

The UCS sends the data to an appropriate formatting module. Different methods are available to determine type of file. For example, if the data are audio data, the data are sent to be audio formatted 105. If the data are video data, the data are sent to be video formatted 106; and if the data are animation the data are sent to a server that can format animation data 107. The data can also be sent to a generic compression service 108. It is also indicted to which operating system the data should be formatted, and whether the data should be upgraded or downgraded.

The universal conversion server 104 can define automatically what should be changed or\and how it should be changed. The universal conversion server 104 has access to the user computer 101 via the network 100. It can read from a special system file in the user computer the information about the computer (what is the operational system, what are applications are stored in this computer, e.g. word pro or Microsoft word etc.). The universal conversion server (UCS) can use this information to decide how to change the file that it received from the user. For example, if the UCS received the audio data from the computer 101 and did not receive any explanations what should be done it can do the

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following. First, it defines what type of data it received (audio, video etc.). It can define the type of data using different methods. Some of these methods are described in a patent application serial no. 09/137,966. After the UCS defined the type of data and in which operational system (OS) it was formatted it checks what OS is used in the computer 101 and what applications are available in 101 to process this type of data. If the UCS finds that there is some application in the computer that can process this type of data but that the data was initially formatted to be processed by a different application, then the UCS sends the data to an appropriate formatting server with the request to reformat it to the application that is available in the computer 101. For example, if the UCS received a textual data that was formatted for Microsoft word and if the UCS found that the user computer 101 has only Word Pro application, than the UCS sends the textual data to a text formatting server 120 and requests to reformat it from Microsoft Word format to Word Pro format. Similarly the UCS reformat data to the OS system that is used by the user computer 101.

The Universal conversion server is also connected to the Universal Driver 109. The Universal Driver patent application performs some of the conversion operations.

The Universal Driver 109 can be used to read data from a local computer drivers. The Universal Driver is described in the attorney docket 13441. For example, instead of sending data from the computer 101 to the UCS 104 the user requests the UCS to read the data from his

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the program (e.g. game) that was received from the user
computer 101 or that is stored on the disk in the user
computer (e.g. game) that was received from the user
computer 101 or that is stored on the disk in the user
5 computer (e.g. floppy disk) (that is accessible from the
Universal Driver 109). Usually programs that people use
in computers are compiled from some source code. The
same source code can be used to compile a source code to
different OS. If the UCS finds the source code in 110
10 from which the program was compiled, the UCS used a
module 111 to adapt the source code for compilation in OS
that is in the computer 101. Usually, only small
modifications are needed to adapt a source code for
compilation to a different operation system. For
15 example, if the source code was done for compilation in
UNIX and it is necessary to compile a source code in NT,
then should change formats for integers. After the
source code is adapted in 111 for a different compiler it
is compiled using a suitable compiler from the set of
20 compilers in 112. Then a new compiled program (e.g.
game) is sent to the user computer 101.

Figure 2 describes what needs to be done with the data
that are given to the Universal Server. Table 200 shows
25 the user requirements. At 201, the user manually enters
all the data. For example, at 202, the user states what
needs to be converted. Row 203 shows any text that must
be converted into Microsoft Word, row 204 shows all the
audio files that need to be converted into WAVE files,
30 and row 205 shows the compressed text that needs to be
converted into post script format. When data needs to be

information from the description module 304. 305 is the license agreement, 306 shows what compilations are allowed, and 307 shows the fees for the recompilations.

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Figure 4 is a flow chart of the universal conversion system. At step 400, files are entered into the computer (either from the user or from network), and at step 401 the UCS is contacted. At step 402, a check is made to determine whether the file format is compatible with the operating system(OS) in the computer. If the format is not compatible, it means that the file is not recognized by a OS (i.e. on any input media such as CD-ROM, a floppy disk, tape, e-mail, etc.). In this case, the file is sent to the Universal Driver, as represented by step 403. A Universal Driver that may be used is disclosed in U.S. patent application no. _____ for "Universal Driver Server," filed _____ (Attorney Docket 13441), the disclosure of which is herein incorporated by reference.

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On the Universal Driver system, the data can be reformatted, as represented by step 404, into a format compatible to the OS (for example, audio data can be formatted from OS in Apple to OS in Intel). If, at step 402, it is determined that the file is compatible with the system, then the routine proceeds to step 407.

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If the data do not need to be reformatted, the routine proceeds to step 414 and the data are processed as the user requests. Otherwise, the file is sent, to the universal server; and this server checks, at step 407, whether the file is executables -- i.e., programs that were obtained after compilation. If the file is

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executable, then, as represented by steps 408 and 409, the routine checks the Universal Driver to determine whether the program can be replaced on the Universal Driver. Copending patent application no. _____

5 (Attorney Docket No. 13441) describes a suitable Universal Driver that can be used in the practice of this invention.

10 If the program can be so replaced, then, at step 410, the program is replaced at the Universal Driver; and then, at step 411, the program is are sent to the user. If, however, at step 409, the program can not be replaced at the Universal Driver, then the routine proceeds to step 412, where the UCS checks to determine if the source code exists on the storage of source code 110. If the source code does not exist, the routine exits. If the source code exists, then the program is recompiled, at step 413, in a new OS (using 108), and then the program is sent to the user.

20 At step 414, the routine checks for instructions to format data. First, it check the user instructions. If they are absent, it checks the computer menu instructions. After that, data are formatted, at step 415, according to the instructions, and then the data are sent to the user.

30 While it is apparent that the invention herein disclosed is well calculated to fulfill the objects stated above, it will be appreciated that numerous modifications and embodiments may be devised by those skilled in the art, and it is intended that the appended claims cover all

such modifications and embodiments as fall within the true spirit and scope of the present invention.

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